

**WASHINGTON DEPARTMENT OF
FISH AND WILDLIFE**

**DESCRIPTION OF STANDARD MAPS AND
DIGITAL DATA PRODUCTS**

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TABLE OF CONTENTS

Introduction	1
Summary of Information and Request Procedures	2
Costs	5
Priority Habitats and Species Database	6
General Description	
Resolution and Limitations	
Standard Products	
Publications	
Wildlife Heritage Database	10
General Description	
Resolution and Limitations	
Standard Products	
Marbled Murrelet Database	12
General Description	
Resolution and Limitations	
Standard Products	
Spotted Owl Database	14
General Description	
Resolution and Limitations	
Standard Products	
Old Growth Database	16
General Description	
Resolution and Limitations	
Standard Products	

StreamNet Database 17

 General Description

 Resolution and Limitations

 Standard Products

National Wetlands Inventory Database 21

 General Description

 Resolution and Limitations

 Standard Products

Appendix

 A. WDFW Regional Contacts 22

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

DESCRIPTION OF STANDARD MAPS AND DIGITAL DATA PRODUCTS

INTRODUCTION

This document describes locations of important fish, wildlife and habitat information available from the Washington Department of Fish and Wildlife (WDFW). It describes databases managed with Arc/Info geographic information system (GIS) software, and procedures for obtaining standard maps or digital information. This document is not an exhaustive description of all GIS databases managed by WDFW. The information described here contains locational information on important fish and wildlife species that should be considered in land use decisions.

WDFW has invested substantial effort and resources toward the development and distribution of important baseline information on fish and wildlife resources. The demand for this information is often greater than resources available to provide it. For that reason, we have developed a request process and standard products in an attempt to streamline requests for information. The standard products are designed to meet the most common needs.

The time it takes to fill information requests varies between one and eight weeks. Planning ahead will ensure that fish and wildlife information will be incorporated into your project. Potential requesters should closely examine their information needs and limit requests to products they are reasonably certain they can use. This will help WDFW to meet the numerous requests in a timely fashion.

Information on specific locations of some fish and wildlife species is considered sensitive, and access to that information is restricted by WDFW policy. Special precautions should be taken when using and distributing sensitive information. Upon making a request, you will be informed as to the sensitivity of the information you receive and will be given information on the precautions that should be taken.

WDFW wishes to encourage use of this information so costs to requesters for information will be kept to a minimum. Charges for standard map and digital data products are not an attempt to recover data development costs but to cover cost of materials, shipping and handling, and in some cases staff time.

SUMMARY OF INFORMATION AVAILABLE

The data sets covered in this document contain WDFW's knowledge of fish and wildlife resources and occurrences based on research and field surveys conducted over the past 20 years. It is important to note, however, that habitats and species may occur on the ground in areas not currently known to WDFW biologists or in areas from which comprehensive surveys have not been conducted. Site-specific surveys are frequently necessary to rule out the presence of priority species or habitat types. Information from all these data sets are explained in greater detail later in this document. These data sets are:

Priority Habitats and Species Database - An inventory of key species use areas and key fish and wildlife habitats (usually polygonal) based on expert empirical knowledge. These data include locations of federal and state listed species (threatened, endangered, sensitive, candidate) and other priority non-game and game species.

Wildlife Heritage Database - A database containing significant site observations (point occurrences) of non-game species of concern, including federal and state listed species, obtained by surveys or observations by reputable sources.

Marbled Murrelet Database - Locations of Marbled Murrelet detection sites and areas.

Spotted Owl Database - Locations of Spotted Owl site centers and management circles.

Old Growth Database - A database containing information about 1988 late successional forest stands.

StreamNet Database - A statewide inventory of anadromous and resident fish distribution.

National Wetlands Inventory Database - An inventory identifying wetland and deep water habitats based on data derived from high altitude color infrared aerial photographs. Data is managed by the Washington Department of Ecology.

Information is available as standard maps or in digital Arc/Info geographic information system (GIS) export formats. The maps are suitable for environmental review and planning for site-specific projects, as well as many other applications.

REQUEST PROCEDURES

Fish and wildlife information described in this document are typically available in standard formats that are explained in the sections on each database. Because of the volume of requests WDFW receives, and staff limitations, custom requests are discouraged; however, if the standard offerings are not workable for your needs, contact us so we can explore other options.

These data do not represent exhaustive inventories. They are compilations of existing knowledge from field biologists that are updated as knowledge improves. Because these fish and wildlife data are not exhaustive and subject to change, project review for fish and wildlife should not rest solely on mapped or digital data. Instead, they should also consider new information gathered from field investigations.

Also, because the databases are subject to change information should not be used if over six months old; please request updated maps and digital data rather than use old information.

Some information on specific locations of fish and wildlife is considered sensitive by the Director of WDFW and will be released in a standard format only. This format may be either tabular, digital, and/or displayed on a 1:24,000 map. WDFW standard map format consists of fish and wildlife information displayed for an individual section with a one square mile buffer (nine square miles total). WDFW will release sensitive fish and wildlife information covering an area greater than thirty square miles to the following parties in conjunction with the signing of the sensitive Fish and Wildlife Information Memorandum of Understanding (MOU).

- Government agencies
- Tribes
- Researchers affiliated with an accredited college or university
- Landowners (for their lands), or other parties with permission from the landowner
- Agents of the above parties (e.g., consultants, realtors, etc.)

The MOU indicates that the signatory person or agency recognizes the appropriate guidelines for disseminating sensitive fish and wildlife information. For additional information contact WDFW at (360) 902-2543.

Other data sets that are not part of the standard data release are available. These are the Spotted Owl Site Center Database, Game Management Units, Western Washington Late Successional Forest Stand Data, NOAA Seabird Colonies 1989, Marine Resource Data, and Water Resource Inventory Areas. All except the Spotted Owl Database can be requested without a MOU. General descriptions about these data sets will be furnished upon request.

For more information on WDFW you may visit our web site at www.wa.gov/wdfw or visit the Priority Habitats and Species site at www.wa.gov/wdfw/hab/phspage.htm.

For information on the state's endangered, threatened, and sensitive plants as well as high quality wetland and terrestrial ecosystems, please contact the Washington Department of Natural Resources, Natural Heritage Program at PO Box 47016, Olympia Washington 98504-7016, by phone (360)902-1667 or visit the web site at www.wa.gov/dnr/htdocs/fr/nhp/wanhp.html.

The following steps should be followed to order information.

Step 1. Send a completed Fish and Wildlife Order Form and/or a detailed letter requesting information to:

Washington Department of Fish and Wildlife
Priority Habitat and Species
600 Capitol Way North
Olympia, Washington 98501-1091

or fax to: (360) 902-2946

The letter (if sent without a order form) should contain the following information:

- name, address, phone of requester
- geographic area of request (township, range, and section)
- brief description of the project and involved parties
- standard map or digital data product requested

The time it takes to fill information requests varies between one and eight weeks. If response time is a concern make note of it; however, WDFW cannot guarantee meeting your deadline.

Step 2. Upon receiving your request, WDFW staff will review for further clarification and determine if a Sensitive Fish and Wildlife Information MOU is required to communicate to you WDFW's concerns about sensitive information. If needed the necessary documents will be sent to you for signature(s). A completed MOU will be returned to you for your files upon our signature. When the MOU is completed, we will fill your request as soon as possible. If no MOU is required, the request is logged and channeled to staff, to fill the request. A phone call to WDFW staff at (360) 902-2543 would determine if your request requires an MOU.

Step 3. WDFW staff will ship you the requested maps or digital data products and documents explaining the information, pre-payment is not required. An invoice for information provided will be included with your requested products.

Step 4. Requesters needing assistance with biological interpretation of information can obtain it by contacting the WDFW Habitat Program Manager (see Appendix A) to ask for the area habitat biologist for your project area. General questions about the standard products should be directed to WDFW staff at (360) 902-2543. Specific questions for use of the digital data should be directed to the data manager responsible for the particular data set in question (see individual data set descriptions).

Step 5. For clarification of the available information or request procedures, contact WDFW at (360) 902-2543.

COSTS

Because of the high volume of requests for information received by WDFW, we need to charge for these products to recover some of our costs. We are not attempting to recover data development costs but do find it necessary to charge for materials, labor, and shipping and handling for information requests. The cost schedule is available upon request.

PRIORITY HABITATS AND SPECIES DATABASE

Data Manager: Terry Johnson
(360) 902-2494

General Description

The Washington Department of Fish and Wildlife (WDFW) has developed and maintains the following products:

1. A list of priority habitats and species;
2. Mapped locations of priority habitats and species. Areas delineated on maps are supported by descriptive information contained in a printed report;
3. A geographic information system that provides access to the mapped and tabular information;
4. Management Recommendations for priority habitats and species.

The Priority Habitats and Species (PHS) Database consists of polygons or points that describe occurrences of priority habitats and species. All priority species mapped areas represent known use areas; they are not potential habitats. Priority habitats are areas that support diverse, unique, and/or abundant communities of fish and wildlife. Mapped data are accompanied with reports detailing each priority habitat and species.

PHS information is collected by WDFW biologists using the best information available from research efforts, surveys, or field observations. The exact source of each delineated feature is described in the accompanying report. These data represent known occurrences of priority habitats and species, not potential or theoretical.

Point locations of priority non-game species are also in the Wildlife Heritage (HRTG) Database and are included with standard products. Additionally, some game and non-game fish species are considered priority species; information on their distribution are in the StreamNet Database.

Map and digital data products are supported by documents titled *Management Recommendations for Priority Habitats and Species*. These management recommendations are developed with a thorough review of the best scientific literature available. They provide important background information on each species or habitat type and recommendations for conducting land uses that consider the needs of fish and wildlife. When a priority habitat or species occurs in or near a project site, these management recommendations should be consulted to determine how to modify the project in consideration of fish and wildlife needs.

Resolution and Limitations

PHS data are compiled on 1:24,000 scale topographic maps. A code is used on supporting data forms, indicating the locational accuracy of the feature as determined by the field biologist doing the mapping. Accuracy ranges from within one quarter mile to a general area.

WDFW updates this information as additional data become available. Because fish and wildlife species are mobile and because priority habitats and species information changes, project reviews for fish and wildlife should not rest solely on mapped information. Instead, they should also consider new information gathered from current field investigations. Remember, priority habitats and species information can only show that a species or habitat type is present, they cannot show that a species or habitat type is not present. These products should not be used for future projects. Please obtain updates rather than use outdated information.

Priority habitat information on old-growth are not routinely provided. A separate request must be made to obtain this information. Wetland information on maps or digital data largely consist of the U.S. Fish and Wildlife Service National Wetland Inventory (NWI). NWI information are included on the standard 1:24,000 scale maps; digital data for NWI are provided for small areas. For larger areas, NWI digital data can be obtained from the Washington Department of Ecology.

Standard Products

Map Products

Detailed 1:24,000 Scale Habitats and Species Maps ▶ The PHS Database and recent (observations since 1978) information from the Wildlife Heritage (HRTG) Database are shown on a single map. Spotted owl management circles, marbled murrelet detections locations, NWI, seabird colonies, and streams (1:100,000 scale resolution) from the StreamNet Database with any species of anadromous fish present, presence of critical spawning habitat for resident fish, and priority fish species are also on the map. A report is provided to further describe each mapped PHS polygon and HRTG point feature.

1:100,000 Scale Habitats and Species Maps ▶ The maps are at a scale of 1:100,000 and they overlay the US Geological Survey (USGS) 1:100,000 quadrangle maps. Maps contain locational information for a specified single species or a single habitat type, transportation and utilities, and major public lands. This format is used when information about a specific species or habitat type is required. A report that describes fish and wildlife resources is not available with the 1:100,000 scale maps. If more detailed information is needed please request either digital data or the 1:24,000 scale habitats and species maps (see above description).

Habitats and Species Summary Maps by County (variable scale) ▶ This map is a summary of the information and not at any particular scale. The maps contain summary information of priority habitat and species (species and habitat type are not specifically identified), transportation and utilities, and NWI areas. This format is used when highly accurate locational data are not required and data for a large area are requested. A report that describes fish and wildlife resources is not available with the summary county maps. If more detailed information is needed please request either digital data or the 1:24,000 scale habitats and species maps (see description on previous page of this document).

Digital Data Products

Digital data are available in Arc/Info export format. The digital data is provided as a single coverage or is grouped into coverages corresponding to the USGS 1:24,000 7.5-minute scale topographic maps. Each 7.5-minute quadrangle is a separate coverage. A series of tabular files (INFO tables) related to the coverages, describe features in the coverage. Complex relationships exist between the attributes and coverage features so expert Arc/Info knowledge is required to use these data.

Item Descriptions

The following is a brief list of item descriptions in the database. A more detailed document is provided with the digital data.

EOFORM▶ Number identifying data form on which descriptive information was originally recorded.

EOCODE▶ Habitat or species code.

CRIT▶ Criteria identifying how the area is used by the indicated species. This field is blank when EOCODE is a habitat.

SEASON▶ Season of use. This field is blank when EOCODE is a habitat.

COORD▶ Map coordinate accuracy.

CLASS▶ Flags record as a habitat or species.

SITENAME▶ Name assigned by mapper to identify the site. Usually based on a local geographic feature.

GENDES▶ General description describing use of area by fish and wildlife or a specific description of the habitat.

RECORDER▶ Person who recorded the information on the data form.

MAPPER▷ Person who did the mapping.

COMPCODE▷ Date information was compiled.

The following fields relating to source of information can occur multiple times to allow the compiler to backup information with multiple sources.

SRCCODE▷ Identifies the source of information by class.

SRCDATE▷ Date of source of information.

SRCLEAD▷ This field identifies the specific source of information supporting the map and tabular data.

SRCSYN▷ Provides a general narrative describing the information provided by the source identified in SRCLEAD.

MODWHO▷ Last person to modify the record.

MODDATE▷ Date of last modification of the record.

Publications

Management Recommendations for Priority Habitats and Species ▶ Documents containing supportive information for managing and protecting priority habitats and species. These documents may not be available for all habitats and species at the time you request them.

Priority Habitats and Species List ▶ A document containing a list of those habitats and species considered priority and criteria for listing as such.

These publications are available on the WDFW web site at www.wa.gov/wdfw/hab/phsrecs.htm. If you are unable to download a publication or the one you want is unavailable on our web site, limited printed copies are available by calling (360)902-2543.

WILDLIFE HERITAGE DATABASE

Data Manager: Tom Owens
(360) 902-2489

General Description

The Wildlife Heritage (HRTG) Database contains information on documented point occurrences of non-game species of concern, state and federal species including those designated as endangered, threatened, sensitive, candidate, and monitor. This database was developed in the early 1980s and formed the beginning of the Priority Habitats and Species (PHS) Database. Together, PHS and HRTG provide locational data on important fish and wildlife.

HRTG data are collected by a variety of means from field surveys to reports from reputable sources. Scope of the database is statewide and encompasses over 230 species. The database is continually being updated. High priority species are surveyed either every year or every five years. Lower priority species are surveyed as field logistics allow or on a less rigorous schedule.

Marbled murrelet detection sites are not included in the HRTG Database. If there are murrelets within your project area they will be included as part of the standard HRTG request but in a separate database. Please see the Marbled Murrelet Database section of this document for more information.

Resolutions and Limitations

Positionally accurate data for current observations are represented as point locations. These data are at least accurate to within a quarter section of the Public Land Survey (PLS). Older and less positionally accurate data are reported by PLS section.

Only the most current (1978 and later) and accurately known data will be supplied as points with standard products. All other information will only be provided in response to special requests. Using the older information requires consultation with Washington Department of Fish and Wildlife (WDFW) biologists.

This database contains information on species locations with direct regulatory implications. It is updated constantly, therefore, information should not be used for future projects. Please obtain updated maps and digital data rather than use outdated information.

Standard Products

Map Products

HRTG data are available as maps at 1:24,000 scale. They are combined on a single map with information from the PHS Database. See map descriptions under the PHS section for further details. A report that describes each point on the map is included. This report is different than that produced for the PHS Database because the descriptive items are not the same.

Digital Data Products

Digital data are available in Arc/Info export format.

Item Descriptions

The following is a brief list of item descriptions in the database. A more detailed document is provided with the digital data.

TRS▷ Legal Description.

CLASS▷ Code that separates general groups.

STASTAT▷ State status.

FEDSTAT▷ Federal status.

COORD▷ Code that describes the precision of the mapped location.

CRIT▷ Mapping criteria.

SPPCODE▷ Standard WDFW species code.

YEAR▷ Year of observation.

GENDES▷ Common name of species followed by description of location.

DTENTER▷ Date entered.

DTMOD▷ Date of last modification of the record.

MARBLED MURRELET DATABASE

Data Manager: Tom Owens
(360) 902-2489

General Description

The Washington Department of Fish and Wildlife (WDFW) maintains information on marbled murrelet occupancy detection locations, detection areas and detection sections. Data are collected by a variety of means from field surveys to reports from reputable sources. The database is continually being updated.

Resolution and Limitations

Positionally accurate data for observations are represented as point locations. These data are at least accurate to within a 1/16 section of the Public Land Survey (PLS).

Of 19,000 marbled murrelet detections, 17,000 locations were digitized from 1:12,000 scale aerial photography. Only the detections indicative of stand occupancy will be provided in the standard data retrieval. All other data will only be provided in response to special written requests.

This database contains information on species locations with direct regulatory implications. It is updated constantly, therefore, it is essential that users obtain updates before using maps and digital data for future projects.

Standard Products

Map Products

Map products are designed for users external to the forest practice permit process and as such does not reflect all the information pertinent to forest practice review. The Forest Practice Rules adopted August 22, 1997 by the Forest Practice Board and administered by the Washington Department of Natural Resources require forest practice applications to be screened against marbled murrelet detection areas and detection sections. Marbled murrelet detection locations are included in the standard map products, but the detection areas and detection sections are not included. If your project is affected by Forest Practice Regulations, you should specially request murrelet detection areas.

Marbled Murrelet detection locations are combined on a single map with information from the Priority Habitats and Species (PHS) Database. See map descriptions under the PHS section for further details. A report detailing information on marbled murrelets is not included with the standard map products. If specific details on marbled murrelet detection locations are

required they must be requested from the data manager.

Digital Data Products

Digital data are available in Arc/Info export format. There are multiple coverages maintained by WDFW to manage marbled murrelet data. Only the detection locations will be provided in the standard data retrieval. All other data will only be provided in response to special written requests.

Item Descriptions

The following is a brief list of item descriptions in the database. A more detailed document is provided with the digital data.

REFNUM▷ Unique reference number used for a single survey

OBSCODE▷ Code that identifies specific behavior combinations

DETIMEA▷ Time noted for each murrelet detection

VOCAL▷ Number of reported vocalization

AVOCAL▷ Alternate vocalizations

OVOCAL▷ Other vocalizations (whistle or soft que)

DETTYPE▷ Detection type

AUDIO▷ Audio type

BEHAVIOR▷ Behavior

NUMBIRDS▷ Number of birds

BIRDHGT▷ Bird height reported by observer in fractions of canopies

DETNOTES▷ Detection notes reported by observer

TOWNSHIP▷ Township number

RANGE▷ Range number

SECTION▷ Section number

DTENTER▷ Date survey was entered into official WDFW database

DTMODIFY> Date of last modification of the record

SPOTTED OWL DATABASE

Data Manager: Tom Owens
(360)902-2489

General Description

The US Fish and Wildlife Service and Washington Department of Natural Resources (DNR) are the primary regulatory agencies managing impacts to spotted owls. These agencies have adopted a management circle approach for assessing the remaining suitable habitat surrounding documented spotted owls. Spotted owl observations are evaluated by Washington Department of Fish and Wildlife (WDFW) biologists and organized to comprise the most accurate representation of owl territories based on type of observation, dispersal distances, habitat characteristics, and topography. The most recent related observation is designated the spotted owl site center. From this site center location a radius of 9504 feet (1.8 miles) is used for owl sites east of the I-5 corridor or 14256 feet (2.7 miles) is used west of I-5 to evaluate the amount of remaining habitat. The different radii reflect differences in home range sizes used by owls as determined by radio-telemetry studies.

Spotted owl survey results are sent in to WDFW where owl locations are compared to existing spotted owl site centers. If the new locations are sufficiently distant from established site centers, a new site is established. If the new observation is geographically related to a existing site center, has equivalent or greater biological significance, and is more current than the observation used to establish the existing site center, the site center is moved to the location of the new observation and the site center datum is encoded with the new biological status and observation date. If the new observation is geographically related to a existing site center, but does not have equivalent or greater biological significance relative to the observation used to establish and existing site center, the site center remains unchanged.

Resolution and Limitations

Survey data are digitized from 1:24,000 US Geological Survey quadrangle maps. The spotted owl site center database and its associated Arc/Info covers are continually being updated from data received from WDFW, DNR, and timber industry survey efforts. Data from previously unsurveyed areas or of higher biological status receive data processing priority over geographically or biologically redundant data.

This database contains information on species locations with direct regulatory implications. It is updated constantly, therefore, it is essential that users obtain updates before using map and digital data for future projects.

Standard Products

Map Products

Areas potentially impacted by spotted owl management concerns are combined on a single map with information from the Priority Habitats and Species (PHS) Database. See map descriptions under the PHS section for further details. A report detailing information on spotted owls is not included with the standard map products. If specific details on spotted owl site centers are required they must be requested from the data manager.

Digital Data Products

Digital data are available in Arc/Info export format. Since state and federal agencies are responsible for developing and implementing conservation strategies for the spotted owl, these data will not be routinely provided. If you require spotted owl digital data, a special written request must be made.

Item Descriptions

The following is a brief list of item descriptions in the database. A more detailed document is provided with the digital data.

REFNO▷ A unique numeric identifier for each entry

SITENAME▷ A geographic name used to identify spotted owl site center area

LATLONG▷ Latitude/longitude of site center as determined by digitizing from 1:24,000 maps

TRS▷ Township, range, and section of the site center

SITENO▷ A unique numeric identifier for each site

HIGHSTAT▷ Hierarchical scheme (listed highest to lowest)

HIGHYEAR▷ Most recent year achieving the highest status

LASTSTAT▷ Status of site during most recent year when at least one spotted owl was detected

LASTYEAR▷ Most recent year when spotted owl presence was detected

STATUS▷ Overall official status of the site based on all years data

OFFSTAT▷ Official site status numeric code

I5SIDE▷ Site center is east or west of the I-5 corridor

OLD GROWTH DATABASE

Data Manager: Shelly Snyder
(360) 902-2483

General Description

The Washington Department of Fish and Wildlife (WDFW) undertook an old growth inventory and mapping project as part of the overall Remote Sensing Program in 1986. WDFW uses remote sensing technology for wildlife habitat mapping and for research into habitat use by animals. The driving force behind this project was the need for forest stand type mapping for use in spotted owl habitat preference research, and management applications for elk and mountain goats. The objective was to improve the mapping of forest stand type categories in western Washington using digital Landsat Satellite data.

Resolution and Limitations

The Landsat data and other data analysis were done by WDFW personnel between 1986 and 1989 and is available for most of western Washington (excluding coastal lowlands). If a more detailed description of the Old Growth Database is needed please request the following document: *The Status of Old Growth in Western Washington: A Landsat Perspective* by James R. Eby and Michelle C. Snyder, January 1990.

Standard Products

Map Products

Old Growth Maps are at a scale of 1:24,000 and overlay the US Geological Survey 7.5 minute quadrangle maps. The maps contain information about late successional timber stands which are divided into three types, old growth, large saw timber, and small saw timber. Maps also contain major rivers, township boundaries and section boundaries. Old growth maps are not included with the standard habitats and species requests, they must be requested separately.

Digital Data Products

Digital data are available in Arc/Info export format. The data is provided as a single coverage or is grouped into multiple coverages corresponding to US Geological Survey (USGS) 1:24,000, 7.5-minute scale topographic maps.

Item Descriptions

GRID-CODE► Late successional timber stand types

STREAMNET DATABASE

Data Manager: Martin Hudson
(360) 902-2487

General Description

The StreamNet Database (formerly known as the Washington Rivers Information System - WARIS) contains statewide fish information at 1:100,000 scale. StreamNet was originally conceived in 1984 for hydro power planning but was later expanded during 1991 to provide administrators with the more detailed information required to meet other growing natural resource planning needs. The project goal is to meet these needs by providing information that is descriptive, current and standardized for use in GIS and tabular based environments while giving significant analytical capabilities on both. A stream reach ranking system is also maintained to support current regional hydro power regulatory requirements.

The StreamNet Database is one part of a four state database that began with the 1984 Pacific Northwest Rivers Study and the Northwest Environmental Database (NED). This effort is funded primarily by the Bonneville Power Administration in cooperation with the states of Idaho, Montana, Oregon and Washington. In 1995 NED was merged with CIS (Coordinated Information System) to form the greater StreamNet Project managed by Pacific States Marine Fisheries Commission. StreamNet is presently supported locally by the Washington Department of Fish and Wildlife (WDFW) with update assistance provided by several Washington Indian Tribes and other state and federal agencies. In addition, WDFW provides technical support via database management and hardware and software support.

Information in StreamNet includes the National EPA 1:100,000 scale streams with major lakes and double banked streams; anadromous and resident fish presence with known spawning and rearing; and hydro power protected area designations for fish. Future categories may include riparian and in-stream habitat information.

Resolutions and Limitations

StreamNet information is available statewide at 1:100,000 scale of resolution and is the product of 1989-1997 data collection efforts.

The anadromous fish data represent a data compilation effort involving fish experts from many different agencies and organizations. Resident fish information is generalized to a river reach. More site-specific resident fish information is not available through this data set. The resident fish information were compiled largely by interviews with WDFW biologists, so it is less comprehensive. About 50 percent of the 1:100,000 scale streams have known resident fish resources that have been described; the rest are unknown.

Because of the complexity of this fish data, only limited components are available on the standard maps.

No report detailing fish resources by river reach is available at this time. For detailed information on the distribution of individual species or other details, either digital data must be obtained or a request for that information must be made of the StreamNet data manager.

Standard Products

Map Products

Detailed 1:24,000 Scale Habitats and Species Maps ▶ Presence of anadromous, resident, and priority fish species from StreamNet are combined on a single map with information from the Priority Habitats and Species (PHS) and Wildlife Heritage (HRTG) Databases. Streams that contain anadromous, resident, and priority fish are highlighted. This map does not display or provide a report for the individual fish species that utilize each river reach, information on the distribution of individual species are present in the database and may be specially requested from the data manager. See the PHS and HRTG sections for using the maps.

Anadromous Fish Maps ▶ Map displays anadromous fish distribution for a major river basin or for a county (these maps average 3' x 4' in size). Streams that contain anadromous fish are highlighted. Although this map does not display the individual anadromous species that utilize each river reach, data on the distribution of individual species are present in the database and may be specially requested. A point denotes the actual location of the upper extent of anadromous use in a river/stream system. This upper extent point often corresponds to a physical blockage; if so, the type of blockage and its passability (I = impassable, P = passable) are noted on the map. Many upper extent points may appear along a river/stream system for various species. A search upstream will indicate the absolute upper most extent of anadromous range. Point locations of production facilities and codes noting the type of the facility and passage facilities (e.g., fish ladders) are on the map. The legend defines all codes displayed on the map. Ancillary data displayed on the map include: 1:100,000 scale quadrangle boundaries, township and section boundaries from the Public Land Survey, and major roads. A report detailing anadromous fish resources by river reach is not available at this time. For detailed information on the distribution of individual species or other details, either digital data must be obtained or a request for that information must be made of the StreamNet data manager.

Resident Fish Maps ▶ This map displays the presence of critical spawning habitat for one or more species for a major river basin or for a county (these maps average 3' x 4' in size). Ancillary data displayed on the map include: 1:100,000 scale quadrangle boundaries, township and section boundaries from the Public Land Survey, and major roads. A report detailing resident fish resources by river reach is not available at this time. For detailed information on the distribution of individual species, habitat parameters, or other details, either digital data must be obtained or a request for that information must be made of the StreamNet data manager.

Priority Fish Species Maps ▶ Map displays by a major river basin or for a county the presence of anadromous and resident fish species identified as priority by WDFW (these maps average 3' x 4' in size). These fish species meet at least one of the three criterion for listing a species as priority. See the *Priority Habitats and Species List* (available upon request or on our web site at www.wa.gov/wdfw/hab/phspage.htm) published by WDFW for details on the criteria for which species are considered priority. Ancillary data displayed on the map include: 1:100,000 scale quadrangle boundaries, township and section boundaries from the Public Land Survey, and major roads. A report detailing priority fish resources by river reach is not available at this time. For detailed information on the distribution of individual species, habitat parameters, or other details, either digital data must be obtained or a request for that information must be made of the StreamNet data manager.

Anadromous or Resident Fish Single Species Maps ▶ Map displays anadromous or resident fish distribution for a major river basin or for a county (these maps average 3' x 4' in size). Streams that contain a specified species are highlighted. A map for an anadromous species will include a point that denotes the upper extent of anadromous use in a river/stream system. Point locations of production facilities and codes noting the type of the facility and passage facilities (e.g., fish ladders) for anadromous fish are on the map. The legend defines all codes displayed on the map. Ancillary data displayed on the map include: 1:100,000 scale quadrangle boundaries, township and section boundaries from the Public Land Survey, and major roads. A report detailing anadromous or resident fish resources by river reach is not available at this time. For detailed information on the distribution of individual species, habitat parameters, or other details, either digital data must be obtained or a request for that information must be made of the StreamNet data manager.

Digital Data Products

Digital data from the hydrography, anadromous fish, and resident fish data layers of StreamNet are provided by USGS hydrologic units (basins) in Arc/Info export format. These data consist of a combination of coverages and related INFO attribute tables.

Item Descriptions

The following is a brief list of item descriptions in the database. A more detailed document is provided with the digital data.

LINE.TYPE▶ Code identifying type of stream feature (e.g., intermittent or perennial stream).

RRN▶ Extended U.S. Environmental Protection Agency (EPA) river reach code composed of: USGS hydrologic unit code (HUC), EPA segment number from 1:250,000 scale trace file or USGS extension (SEG), subreach identifier that provides a mechanism for subdividing a reach without assigning a new SEG value (RMI). This is the key item that provides a relationship to all attribute files.

NAME▷ Stream Name.

HUC▷ USGS hydrologic unit code, first eight digits of RRN.

SEG▷ Reach segment code, four digits following the HUC portion of RRN

RMI▷ Reach mile identifier, last four digits of RRN.

SEGRMI▷ SEG and RMI combined to give a unique reach identifier.

SPPCODE▷ Fish species code

BLOCK▷ Blockage type present. Blockages are identified as passable or impassable to anadromous fish and the type of blockage (e.g., logjam, dam, falls).

PRODUCT▷ Production facility type.

FACLNAME▷ Production facility name.

LOCATION▷ Facility location.

OPERATOR▷ Agency operator of the facility.

REV_DATE▷ Revision date.

REV_WHO▷ Revision source.

NATIONAL WETLANDS INVENTORY DATABASE

Data Manager: Washington Department
of Ecology (360)407-6000

General Description

The National Wetlands Inventory (NWI) Database is an inventory system developed in 1974 by US Fish and Wildlife Service. Mapped at a scale of 1:24,000 or 1:62,000, NWI identifies wetlands and deep water habitats as either polygons or linear features. Attached to the mapped wetlands are descriptive codes based on the Cowardin classification system (Cowardin et al., 1979). Under the Cowardin system, wetlands are classified within a hierarchical organization according to plants, soils, and frequency of flooding. The NWI data is managed by the Washington Department of Ecology.

Resolution and Limitations

NWI data is collected through stereoscopic analysis of high altitude color infrared aerial photographs. Because the methodology and scope of work impose limitations on the accuracy of the data, there is an inherent margin of error. As there has been no attempt in the design of the inventory system to delineate wetland boundaries, the maps should not be used for regulatory purposes. They are useful as an initial means of identifying the general location and extent of wetlands within a region, and when used in conjunction with hydric soils maps and aerial surveys, as a starting point for developing more detailed wetland inventories.

Standard Products

Map Products

The NWI information are combined on a single map with information from the Priority Habitats and Species (PHS) database. See map descriptions under the PHS section for further details.

Digital Data Products

Digital data are available in Arc/Info export format. The data is provided as a single coverage or is grouped into multiple coverages corresponding to US Geological Survey (USGS) 1:24,000, 7.5-minute scale topographic maps.

Item Descriptions

The following is a brief list of item descriptions in the database. A more detailed document is provided with the digital data.

FWS.CODE	16	16	C	-	NWI code, concatenation of ecological system, subsystem, class, subclass, water
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regime, and other modifier codes.

Appendix A. WDFW Regional Contacts

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE REGIONAL HABITAT PROGRAM MANAGER CONTACTS

For assistance with Priority Habitats and Species Information contact a regional habitat program manger and they will direct your questions to a biologist.

County project is in...	Contact...
Asotin, Columbia, Ferry, Garfield Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	John Andrews 8702 North Division Street Spokane, WA 99218-1199 Phone: (509) 456-4082
Adams, Chelan, Douglas, Grant, Okanogan	Tracy Lloyd 1550 Alder Street NW Ephrata, WA 98823-9699 Phone: (509) 754-4624
Benton, Franklin, Kittitas, Yakima	Ted Clausing 1701 24th Avenue Yakima, WA 98902-5720 Phone: (509) 575-2740
Island, King, San Juan, Skagit, Snohomish, Whatcom	Ted Muller 16018 Mill Creek Blvd. Mill Creek, WA 98012-1296 Phone: (206) 775-1311
Clark, Cowlitz, Klickitat, Lewis, Skamania, Wahkiakum	Rich Costello 2108 Grand Blvd. Vancouver, WA 98661 Phone: (360) 696-6211
Clallam, Grays Harbor, Jefferson, Kitsap, Mason, Pacific, Pierce, Thurston	Steve Keller 48 Devonshire Road Montesano, WA 98563-9618 Phone: (360) 249-4628